

Remarks

Applicant respectfully requests reconsideration of the application.

Information Disclosure Statement

Applicant has filed a supplemental information disclosure statement. Applicant notes that the previous Information Disclosure Statement filed April 25, 2002, appears in the USPTO file as shown in the PAIR system, yet there is no indication that it has been considered. Applicant's respectfully request the Examiner to consider both the supplemental IDS and the IDS submitted on April 25, 2002.

Interview on June 7, 2006

Applicants thank the Examiner for the courtesy of conducting an in-person interview with the undersigned attorney for Applicant, Joel Meyer, on June 7, 2006. An interview summary follows these remarks.

Objections to the Drawings

In the Action dated February 10, 2006, the Office objected to Fig. 2 because of a typographical error in item 124 and because of allegedly not showing elements of claim 18 in the drawings. A replacement sheet, fixing the typographical error, is filed herewith.

Regarding claim 18, Applicant respectfully submits that a further drawing is not necessary for one of ordinary skill in the art to understand the invention. Example embodiments of the detector element referred to in claim 18 are described at page 4, line 19 to page 6, line 10, and page 7, lines 6-18, page 8, line 15 to page 10, line 20 as explained in the Appeal Brief. In addition to describing the claimed detector element, these passages also refer to U.S. Patents 5,862,260 and 6,614,914, which are incorporated by reference and provide additional information including drawings. Note that the reference to the '914 patent was updated in a prior amendment because this patent issued from U.S. Application 09/503,881 during the pendency of this application.

Section 112 Rejection

Claims 1-6 are rejected under 35 U.S.C. Section 112, second paragraph, as being indefinite for being unclear as to what is the subject of detection. The Examiner noted that "it is the alteration that is to be detected," which is correct. Claim 1 has been amended, and there should no longer be any further confusion regarding this terminology.

Prior Art Rejections

Claims 1-2, 4-5, and 7-8 are rejected under 35 U.S.C. Section 102(b) as being anticipated by Fridrich, Jiri, "Combining Low Frequency and Spread Spectrum Watermarking" ("Fridrich1).

Claims 1-2, 4, 7-14 and 18-20 are rejected under 35 U.S.C. 102(a) as being anticipated by Tsekeridou et al., "Wavelet Based Self Similar Watermarking for Still Images," ("Tsekeridou").

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fridrich 1 in view of Fridrich, Jiri, "Image Watermarking for Tamper Detection" (Fridrich 2").

Claims 10, 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhu et al., "Multiresolution Watermarking for Images and Video" ("Zhu") in view of Kundur et al. "Digital Watermarking for telltale tamper proofing and authentications" ("Kundur").

Claim 3 is rejected under 35 U.S.C. Section 103(a) as being unpatentable over Fridrich 1 and U.S. Patent No. 6,625,295 to Wolfgang et al. ("Wolfgang"), or over Tsekeridou in view of Wolfgang.

Response to Prior Art Rejections

Claims 1 and 7-8

Applicant traverses the rejection of claims 1 and 7-8 based on Fridrich 1 and Tsekeridou because neither of these references teach: "adjusting a relationship between selected frequency coefficients to a reference value such that the alteration to the media signal to be detected alters the relationship."

Fridrich 1 refers to another method by Koch and Zhao ("Koch") at the first paragraph of section 2 that "encodes a relationship... by swapping selected frequency coefficients." Fridrich 1 does not use Koch's approach. Further, Koch fails to teach or suggest the claimed adjustment for alteration detection.

Clarifying amendments to claims 1 and 7-8 further distinguish these claims from the cited art as discussed with the Examiner in the interview on June 7, 2006.

Dependent Claims 2, 4-5

Dependent claims 2, 4-5 are patentable over Fridrich 1 and Tsekeridou for the same reasons as claim 1. In addition, the cited art does not teach “the relationship comprises a ratio between a selected coefficient and one or more neighboring coefficients” as set forth in claim 4 and discussed in the interview on June 7, 2006. The claim elements are not inherent in the cited references.

Claims 10 and 17

Tsekeridou does not teach or suggest method recited in claim 10 for evaluating peaks to detect alteration of a media signal. Tsekeridou is not concerned with alteration detection.

The combined teachings of Zhu and Kundur also fail to teach all of the elements of claim 10. The combined teachings fail to suggest the claimed peak evaluation method for determining whether the media signal has been altered. Zhu refers to a peak detector response based on the equation at the bottom of the right column on page 347. This is not the same as peaks at selected frequency locations as claimed. Kunder’s method is used to detect tampering but is unrelated to the claimed peak evaluation method. Moreover, there is no motivation to combine Zhu’s method with Kunder’s method because Zhu’s method is directed to creating a robust watermark that survives distortions. It provides no suggestion of its use for detecting alteration. Kundur’s method is used for tamper detection, and it uses a fragile quantization method that is incompatible with Zhu’s method and fails to teach the elements of claims 10 and 17.

Dependent claims 11-16

Dependent claims 11-16 are patentable over the cited art for the same reasons as independent claim 10. Therefore, there is no further need to elaborate on the differences between these claims and the cited art.

Claim 18

Tsekeridou does not teach all of the elements of claim 18. It does not teach an analyzer to evaluate whether a media signal has been altered as claimed.

Dependent claims 19-20 even further distinguish the cited art.

Claim 3

The combined teachings of Fridrich 1, Tsekeridou and Wolfgang fail to teach all of the elements of claim 3. None of these references teaches “the alteration to be detected is scanning, printing or photocopying.” Fridrich 1 and Tsekeridou are not concerned with authentication. Wolfgang refers to a form of authentication in which a suspect image is examined to determine whether a suspect image is derived from a watermarked original. This is not teaching an alteration to be detected is scanning printing or photocopying because this method will identify both an original and a copy of a watermarked document as being derived from the original without being able to detect whether it has been scanned, printed or photocopied.

Since the cited art fails to teach all of the elements of the claims, the claims should be in condition for allowance.